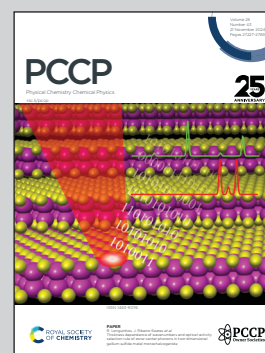


Showcasing research from the Group of Prof. Franziska Emmerling, Federal Institute for Materials Research and Testing, Germany.

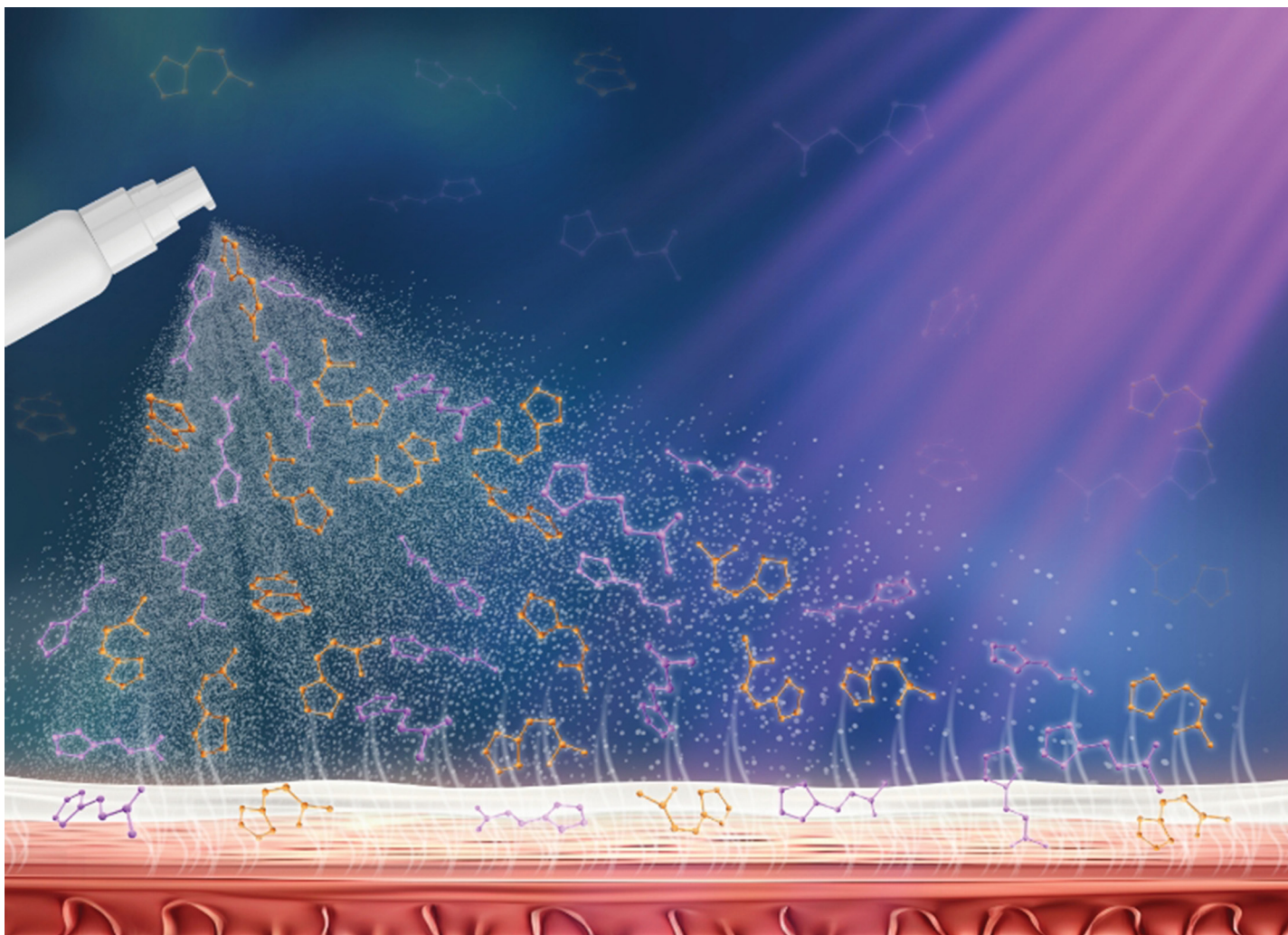
Exploring the role of solvent polarity in mechanochemical Knoevenagel condensation: *in situ* investigation and isolation of reaction intermediates

We explored the catalyst-free Knoevenagel reaction between 4-nitrobenzaldehyde and malononitrile, finding that solvent polarity directly impacts reaction speed. Highly polar solvents like ethanol and DMF sped up product formation. Conversely, non-polar solvents or grinding slowed reactions, yielding intermediates. We isolated and characterized the elusive intermediate, showing its potential for detecting intermediates *in situ*. This promises easier optimization of conditions and underscores mechanochemistry's potential for sustainability.

As featured in:



See Inês C. B. Martins and Franziska Emmerling *et al.*, *Phys. Chem. Chem. Phys.*, 2023, 25, 23637.

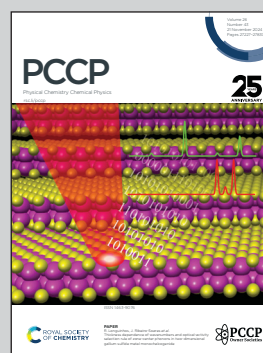


Showcasing research from the groups of Prof. Wybren Jan Buma at the University of Amsterdam (NL) and Prof. Vasilios Stavros at the Universities of Birmingham and Warwick (UK).

Urocanic acid as a novel scaffold for next-gen nature-inspired sunscreens: I. electronic laser spectroscopy under isolated conditions & II. time-resolved spectroscopy under solution conditions

Currently employed UV filters have several health and environment related drawbacks. Potential novel filters with urocanic acid as the active chromophore have been studied by a two-pronged approach, based on high-resolution laser spectroscopy on isolated molecules and time-resolved studies on solutions. Detailed insight into their light-conversion pathways provides an excellent starting point for further optimization of their photoactive properties.

As featured in:



See Wybren Jan Buma *et al.*,  
*Phys. Chem. Chem. Phys.*,  
2024, **26**, 27270.